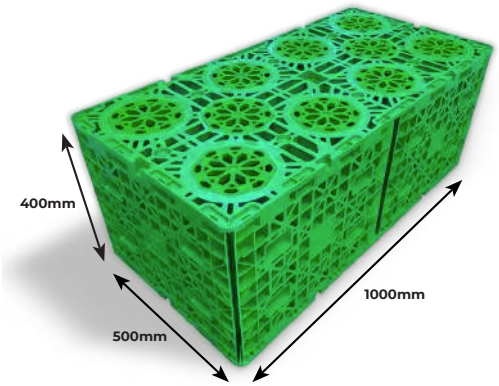
41 Hotuhotu Street Tauriko Tauranga 3110

STORMCELL SYSTEM

INSTALLATION **MANUAL**

SPECIFICATIONS

- Length 1000mm
- Width 500mm
- Height 400mm
- Weight 16kg
- Void Ratio 95%
- Net Volume 190ltr



Durability	Service Life of 50 years Minimum
Load Strength	Vertical: 500kN/m2 @ 23°C Lateral: 93kN/m2 @ 23°C
Minimum Excavation Depth	1.0m to 9m
Minimum Backfill Depth	0.6m to 7m
Chemical & Biological Resistance	Unaffected by Moulds and Algae, Soil Borne Chemicals, Bacteria and Bitumen
Material	100% Virgin Polypropylene
Quality Control	Manufactured Under ISO:9001 (2015)

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STORMCELL MODULE DESIGN

IMPORTANT INFORMATION

- When installing Stormcell Modules, the Upper and Lower Panels with a height of 400mm must be loaded on the Top and Bottom to make sure the Modules have Maximum Strength.

- The Stormcell Modules can be installed in Residential and Commercial Trafficable areas, as long as the Load Capacities are not exceeded and the Minimum Cover of 0.6m is strictly adhered to.

- The Loading Strength of the Module is Tested by Authorized Departments, with CIRIA C737 (2016) as the Test Standard. The Modules are tested with the Highest Strength in a Controlled, Even-Soil and Static Environment.

- Independent Testing has also been completed By WPS Laboratories Wellington; under Test, the Result of Deflection or E = < 2mm, eliminating the need for any additional strengthening or Geogrid products.

STORMCELL SYSTEM
COMPONENTS

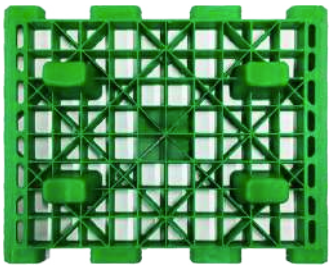
The Stormcell System Components are delivered packed on Pallets and can be unloaded manually or with the use of a machine.

The Quantity and Specifications of the individual Stormcell System Components are listed on the Delivery Notes.

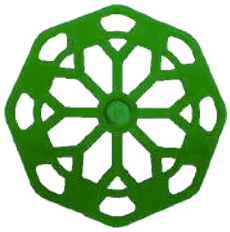
The Recipient or Project Manager is required to check that all of the Stormcell System Components have been delivered, prior to starting the installation process. This eliminates any delays or Safety Issues occurring during the construction period due to lack of materials.

STORMCELL SYSTEM COMPONENTS

Top & Bottom Module are exactly the same.
Size: 1000 [Long] x 500 [Wide] x 200 [Height]mm.



Side Plate. Only needed for 4 sides of the underground pond.



Top Cover is only needed for the top side.

Big Buckle

Small Buckle

Buckles are for connecting 2 tanks together.

PRE-CONSTRUCTION CHECKLIST

TOOLS YOU WILL NEED

- Measuring Tape
- Laser Level
- Marking Paint
- Sabre Saw

EQUIPMENT YOU WILL NEED

- Digger to Excavate for Foundation
- Suitable Compacter for Back-Filling
- Lifting Chains and Strops

EQUIPMENT YOU WILL NEED

- Stormcell System
- Permeable Geotextile (≥ 300g)
- Clean Bedding and Back-Fill Material as per the Design Engineers' Specifications
- Rodding Eye Box or similar as per the Design Engineers' Specifications
- Finishing Material as per the Design Engineers' Specifications

EXCAVATION

At the start of each Stormcell System, prior to the Module Tank, a Rainwater Grill Interceptor and a Sand Sediment Filtration Device must be installed. This can be achieved with a Sump and Half Syphon or as per the Design Engineers' Specifications.

Prepare the Foundation Pit as per the Design Engineers' Specifications, to meet the Size and Depth requirements.

Based on the size of the Stormcell System, excavate the Foundation Pit, allowing 300mm to 500mm around the edges of the Stormcell System, so it can be Back-Filled and Compacted with Course Sand or as per the Design Engineers' Specifications. The Sidewall Slope must be constructed in strict accordance with th relevant Standards.

Safety Fences and Safety Warning Barriers must be installed around the Excavated Site in accordance with Health and Safety Regulations set out by Work safe new Zealand https://www.worksafe.govt.nz/topic-and-industry/excavation/excavationsafety-gpg/

PREPARE THE BASE

Stormcell System Foundation Layer (if required); should be Compacted and Leveled with Excavated Materials, Fine River Sand or as per the Design Engineers' Specifications:

(Compact Density ≥ 95%) (≥ 100mm Depth)

If the Foundation Material is soft, check with the Design Engineer for confirmation that the Base is acceptable, before proceeding.

Any loading point in the Project must be implem ented in accordance with the load bearing requirements as per the Design Engineer's Specifications to avoid collapse due to overload.

INSTALL THE GEOTEXTILE

Line the Foundation Pit with the Geotextile.

Overlap the edges of the Geotextile, a minimum of 300mm and ensure there is enough Geotextile to wrap over the Sides and Top of the Stormcell System when the construction is complete.

Ensure the Geotextile is secured around the top of the Foundation Pit, using Sand Bags or similar Heavy Objects, to prevent the Geotextile slipping into the bottom of the Pit.

During the installation process, it is important to not damage or pierce through the Geotextile to avoid any failure of the Stormcell System.

Geotextile Fabric Placement

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TANK MODULE
INSTRUCTIONS

1

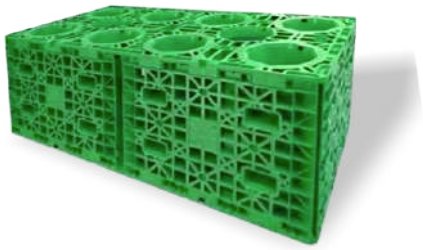
- Each Tank takes approximately 1 minute to assemble.
- One [1] Module inverted onto another Module creates One [1] Tank.
- Each completed Tank Size must be 1000mm x 500mm x 400mm.

Tank

*** The Height, Width and Length Sides must be vertical and horizontal to construct a Tank; this ensures that it can bear the Maximum Rated Load.**

2

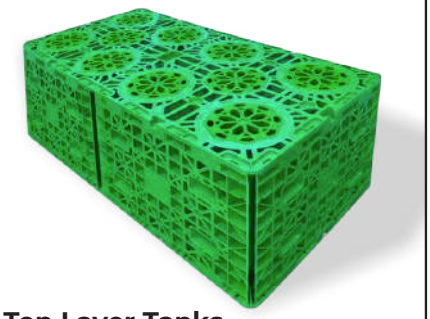
- Each Tank has six [6] Sides
- Fit Side Plates only to the Out Side of the Tanks located on the Outer Perimeter of the Stormcell System.



Outer Perimeter Tanks

3

- Fit the Top Covers only to the Top Site of the Tanks located on the Top layer of the Stormcell System.



Top Layer Tanks

INSTALL THE TANKS

Prior to commencing installation, please ensure that: the entire Stormcell Installation Manual has been read, all of the Stormcell System Components and the necessary Back-Fill materials are ready.

During the installation of the Stormcell System, any issues must be handled cautiously and timely. For example, Back-Filling must be done immediately after the installation of the Stormcell System, to prevent any potential rain causing the whole System to float or shift and thus create costly damage and Project delays.

1. Lift the Top and Bottom Modules into the Foundation Pit.
2. Construct an Installation Platform (or choose a flat surface) large enough to accommodate a Single Tank. [1]
3. Slightly tapping on a Module with a Rubber Hammer can help put Modules together easier.
4. Connect each completed Tank to an adjacent Tank using the Buckles, thus creating the Stormcell System.
5. Fit Side Plates to the Out Side of the Tanks installed on the Outer Perimeter of the Stormcell System, not internally . [2]
6. Fit Top Covers to the Top Side of the Tanks installed on the Top Layer of the Stormcell System, not internally. [3]

Tank Installation

INSPECTION/MAINTENANCE PORTS

The Stormcell System must be rectangular or square shaped and be equipped with Inspection/Maintenance Ports.

The Port locations will be noted on the Drawings provided by the Design Engineer and will accommodate any Site Specific Constraints.

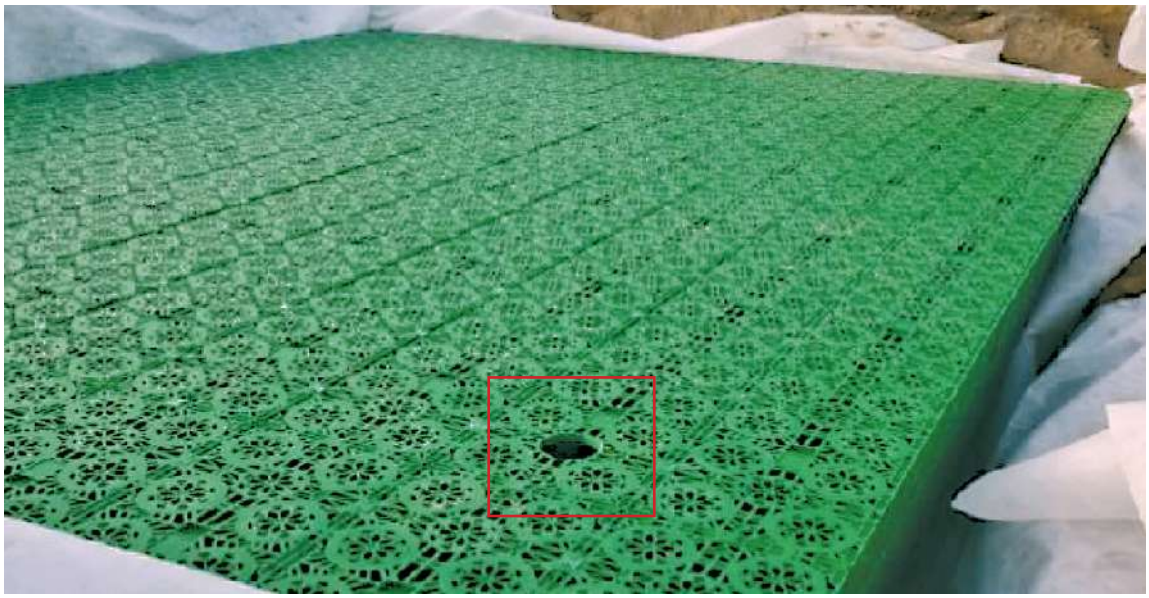
The Ports must be constructed from 150mm UPVC, positioned on the designated Tanks at opposing ends of the Stormcell System and be capped off using a Rodding Eye Box or similar, as per the Design Engineer's Specifications.

The Inspection/Maintenance Ports should be located at opposing ends of the Stormcell System, allowing the monitoring for any infiltration of Silt or Debris caused by failure of the Rainwater Interceptor Filtration Device.

Should infiltration occur; the Stormcell System should be flushed through one of the Inspection/Maintenance Ports.

Contaminants can then be removed via another Maintenance Port at the opposing end of the Stormcell System, using a Vacuum Truck.

The Interceptor Filtration Device should be examined for damage and either be repaired or replaced to prevent infiltration re-occurring.



Inspection/Maintenance Port

BACKFILL AND COMPACTION

On completion of the Stormcell System installation, the Foundation Pit **must immediately** be Back-Filled and compacted as per the Design Engineers' Specifications, to prevent any potential Rain or other Water Infiltration that would cause the whole Stormcell System to float or shift and thus create costly damage and project delays.

1. Wrap the Stormcell System on each Side and the Top using the Geotextile Fabric allowed for at the start of the installation.
2. Evenly, Back-Fill the Stormcell System with clean Bedding and Back-Fill Material on all Sides and on the Top, maintaining the minimum required thickness [300mm - 500mm] and as per the Design Engineers' Specifications.
3. Ensure that the Back-Fill is compacted in **strict accordance** with the Design Engineers' Specifications.

Completed Tank Construction

Wrapped Tanks & Back-Filling

CONNECTING TO THE STORMCELL SYSTEM

Connections to the Stormcell System can be done by penetrating through the Side Plates or by inserting a Pipe down one of the two Access Points installed in every Tank Module.

Wherever a Pipe must pass through the Geotextile, the following procedure must be followed:

1. Cut an “X” in the Geotextile.
2. Insert the Pipe.
3. Secure the four sections (flaps) of Geotextile back over the Pipe away from the Stormcell System.
4. Using Duct Tape, secure the Geotextile around the Pipe.
5. Attach a Stainless Steel Hose Clamp to ensure the connection is securely fastened and sealed.

Stormcell System

Example of Packed and Delivered Stormcell System